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Expressive Movement of High School Choral Musicians

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Expressive performance entails a complex set of behaviors that interact to produce music. In addition to sound cues, performers can benefit from non-verbal communication with each other while performing. Visual information concerning movements has been found to help synchronization (Katahira, et al., 2007), and the relationship between synchronization and movement has been found to exist regardless of musical genre (Seddon & Biasutti, 2009). Goebel and Palmer (2009) found that when auditory feedback was reduced, then motion increased in order to aid communication. Leman, Desmet, Styns, Van Noorden, and Moelants (2009) found that listeners and performers tended to agree on the movement and expressive components of music, with movement being linked to preference for listeners (Juchniewicz, 2008; Sedlmeier, Weigelt, & Walther, 2011). As McClaren (1988) added, “listeners will consistently rate viewed performances higher than heard performances, but only if the visual presentation is positive” (p. 57).

In terms of listeners, there are mixed results for studies of performance ratings. While some studies have documented no differences across raters (Juchniewicz, 2008; Leman, et al., 2009), other studies have shown more experienced listeners to rate performances higher than less experienced listeners (Broughton, Stevens, & Malloch, 2006; Gromko, 1993), suggesting that non-experienced listeners may have a greater benefit from visual supplementary information due to this inequality of perception (Davidson, 1993). Juchniewicz (2008) and Leman, et al. (2009) found no gender differences for raters. Studies on attractiveness bias, however, have found gender differences with females being more lenient raters than males (Wapnick, Darrow, Kovacs, & Dalrymple, 1997; Wapnick, Kovacs-Mazza, & Darrow, 2000).

Research studies have highlighted the combination of intent and musical components that can interact to lead to expressive performances. Fear was found to be more difficult for musicians to portray than sadness, happiness, or anger (Dahl & Friberg, 2007). Madison (2006) found that certain types of music tended to elicit movement in the listener, including music with flow, regularity/irregularity, swing, and groove. Studies have found that expressive movements

are often linked to the structure of the music (Loehr & Palmer, 2009; MacRitchie, Buck, & Bailey, 2009; Palmer, Koopmans, Carter, Loehr, & Wanderley, 2009; Snyder & Krumhansl, 2001), with Toivianen, Luck, and Thompson (2010) finding that movements were linked to metrical groupings. Davidson and Dawson (1995) documented that when performers were asked to restrict their motions, aural and visual components of their performance were perceived as less expressive than when the performers could move naturally.

Research has found that movement can aid in the perception of expression (Davidson, 1993), with visual-audio conditions being documented as the most expressive of performances (Broughton, et al., 2006). The expressive intent of movements may be idiosyncratic to the player, though; observers in one study did not rate certain types of movements as more expressive than other movements (Nusseck & Wanderley, 2009). However, researchers have documented certain expressive movement trends. Keller and Appel (2010) found performers used body sway synchrony as a measure of ensemble cohesion. With pianists (Castellano, Mortillaro, Camurri, Volpe, & Scherer, 2008; Davidson, 1994), and percussionists (Dahl & Friberg, 2007) head movements were found to portray the most consistent expression information, and larger movements tended to align with more expression (Davidson, 1994). For instrumentalists' key strokes contributed to time accuracy (Palmer, Koopmans, Loehr, & Carter, 2009). With conductors, gesture expressiveness was found to have certain characteristics such as larger and faster right hand movements (Luck, Toivianen, & Thompson, 2010). It should be noted, though, that a lack of movement may be a conscious decision of musicians (Wanderley, Vines, Middleton, McKay, & Hatch, 2005), and on the other extreme, musicians may be unable to completely curtail their expressive performance behaviors (Sundberg, Iwarsson, & Hagegård, 1995).

Since movement can be related to expressive intent with other performers and/or with the audience, it may be important to conduct studies in authentic music performance group settings. Most musical movement studies have used solo performers (Broughton, et al., 2006; Castellano, et al., 2008; Dahl & Friberg, 2007; Juchniewicz, 2008; Leman, et al., 2009; Loehr & Palmer, 2009; MacRitchie, et al., 2009). There are few studies that have measured musical movement in musical ensemble settings. Keller and Appel (2010) measured pianists in duo settings, finding that performance synchronization happened when the primo player swayed in advance of the segundo player. Flohr and Brown (1979) found that peer imitation of movements occurred when pre-school and kindergarten students were sat in groups.

There is a need for a musical ensemble study that can describe the idiosyncratic, authentic movements that choral musicians make in a performance setting. In addition, it could benefit teachers to know whether those who score highest on a measure of expressive performance also tend to be strong performers. If this is the case, then the link between these two components can be highlighted in a systematic, strategic way. If there is little to no correlation between movement and performance, then teachers may help students more by sequencing these instructional issues separately. The purposes of the current study were (a) to describe the expressive movements, and (b) to investigate the relationship between expressive movement and performance achievement for a group of high school choral musicians.

Method

The 23 participants were a convenience sample of female choral musicians in one Texas 5A high school. The females were sophomores ($n = 5$), juniors ($n = 12$) and seniors ($n = 6$) in a

varsity women's choir. The current study measured performance achievement in a blind audition format, and measured expression in a contextual group format in a dress rehearsal situation. This format of audition and group dress rehearsal setting was authentic to the normal behaviors of high school choral students. The audition happened in the spring semester, and the dress rehearsal happened the following fall. Three judges scored the audition using a 70-point rating scale that assessed tone, intonation, accuracy, musicianship, and technique; interjudge reliability across the judges was high (ICC = .97). Videotaping was a normal part of the rehearsals for this choir and the students were not made aware that the purpose of the videotaping was to document movement.

For the movement measurement, individual participants were videotaped performing a dress rehearsal of a choral piece in a group women's choir setting. Four pieces were analyzed for variety of expressive movement, and one piece was chosen as having the greatest amount of movement by the greatest number of performers; the piece was a SSAA rhythmic, multicultural piece entitled, *Ogo ni fun Oluwa!* (2012) by Rosephanye Powell. The three content validity judges determined that in order for movement to be useful as a component part of expression, any movement had to be appropriate and synchronized, so points were awarded for each of these components. The videos were analyzed using a 70-point rating scale that assessed movement appropriateness and synchronization (15 points each) and expression (40 points).

The scale ranged from a low score number representing unexpressive to a high score number representing highly expressive (or inappropriate to highly appropriate, or unsynchronized to highly synchronized). One to three points were awarded for each of the following body parts for both appropriateness and synchronization if movement was apparent in the student's performance: head (1-3 points), shoulders (1-3 points), hands (1-3 points), hips (1-3 points), and knees (1-3 points), totaling a possible 15 points for appropriateness and 15 for synchronization. For expression, the same body parts were assessed (head, shoulders, hands, hips, and knees), but the range for each body part was 1-8 points, totaling 40 points. If students did not move then no points were awarded in any category. For descriptive purposes, each of the five body parts was also scored separately in terms of expressive movement with a possible score of 14 (3 possible points for appropriateness, 3 for synchronization, and 8 for expression).

The primary author adjudicated the 23 video performances, and an external judge evaluated a subgroup of the performances as a reliability assessment. Interjudge reliability with the summed scores of 10 of the movement performances for the primary author and an external judge documented acceptable reliability ($r = .81$). To answer research purpose one, to describe the expressive body movements of a group of high school choral students, the following descriptive questions were answered: What body parts did the choir student move; how large were the movements; and where in the music were the movements made? To answer research purpose two, to investigate the relationship between expressive movement and performance achievement for a group of high school choral musicians, an interval to interval level bivariate correlation (Pearson) was calculated between the summed expression scores and the summed audition scores.

Results

Two of the 23 students scored zero on the expressive movement task. The other 21 students ranged from a score of 1 to 59 out of a possible expressive movement score of 70 ($M = 19.52$ $SD = 15.04$). For the three expressive movement subsections (appropriateness, synchronization, and

expression), appropriateness scores ranged from 0 to 11 out of a possible 15 ($M = 3.91$, $SD = 2.94$), synchronization scores ranged from 0 to 15 out of a possible 15 ($M = 6.57$, $SD = 4.61$) and expression scores ranged from 0 to 33 out of a possible 40 ($M = 7.04$, $SD = 8.19$). Those students who scored high on appropriateness also tended to score high on synchronization ($r = .94$), and expression ($r = .86$). Those students who scored high on synchronization also had a tendency to score high on expression ($r = .77$).

The most common body part that was moved by the students was the head ($n = 19$), followed by the shoulder ($n = 14$) and the knee ($n = 11$). The highest movement expression score for body parts was the head followed by the knee and then the shoulder. Of the 19 students who moved their head, they scored an average of 7.84 out of a possible score of 14 (range = 12, $SD = 3.22$); thirteen students had small movements, five had medium, and one had large head movements. Of the 11 students who moved their knee, they scored an average of 7.36 out of a possible score of 14 (range = 11, $SD = 3.47$); four students had small movements, five had medium, and two had large knee movements. Knee movements tended to be predominately one knee ($n = 9$), with only two students bouncing both knees. Of the 14 students who moved their shoulder, they scored an average of 6.00 out of a possible score of 14 (range = 10, $SD = 2.75$); ten students had small movements, three had medium, and one had large shoulder movements. The body movements tended to continue throughout the piece, with very few instances ($n = 2$) of students beginning with slight movements and then increasing in size as the piece continued. The movements did not appear to be linked to specific musical components of the piece other than the issue of continuous rhythmic stability.

The audition scores for all participants ranged from 24 to 63.67 out of a possible score of 70 ($M = 49.72$, $SD = 8.05$) and expressive movement scores for all participants ranged from 0 to 59 out of a possible score of 70 ($M = 17.82$, $SD = 15.41$). The scatterplot documented a linear path to the data with no apparent outliers, and the range of scores was sufficient to calculate the correlation coefficient without great concern for restriction of scores. There was a small, positive, non-significant relationship between movement and audition scores ($r = .12$, $p = .57$, $r^2 = .14$).

Conclusions

It needs to be cautioned that the findings of the current study may not be generalizable to other settings because the sample size was small, only females were measured, and only a rhythmic piece was used to document movement. Initially, the plan was to take three choirs that were all singing the same piece and have them perform together, but having 100 singers cramped on stage made for almost no movement due to space issues. Future studies that can address the contextual nature of group singing while also having the space for larger numbers of both male and female singers could be valuable.

In terms of music choice, the slow piece that the students were rehearsing was not chosen as the measurement piece due to the very small amount of movement that was evidenced by the singers. Madison (2006) noted that pieces such as the rhythmic-with-great-regularity piece that was measured in the current study can elicit movement. Whether slow pieces commonly elicit movements with other high school groups is a viable question. Hence, it would be useful for future studies to investigate musical style and tempo issues further in regard to high school students' expressive movement.

In the current study there were only two students who did not move at all. Having very few non-movers in a group of movers may align with Flohr and Brown's (1979) finding that peers who move may influence the movement of others. For those who did not move, it may have been a conscious decision to do so (as in Wanderley, et al., 2005) or there may have been some other reason for their lack of movement participation. Future research on high school musician expressive movement may benefit from an interview component to the study to describe student perceptions about movement.

For those who did move, synchronization was generally scored high and was related to appropriateness and expression. Since synchronization seems to be a necessary part of expressive movement, sequencing this skill first may be helpful for the successful learning of students. Without the ability to synchronize, it may be difficult for students to add expressive communication skills to their performance skills. Teachers may, then, want to assess their students' abilities on basic tapping tasks before beginning any expressive movement instruction.

The most common body movement documented in the current study was with the head, which aligns with past research findings (Castellano, et al., 2008; Dahl & Friberg, 2007; Davidson, 1994). The common use of the head as a movement technique may be due to the nature of choral singing where text, breathing, and making a sound all use facial and neck body movements. Since the head was common as an expressive tool for the high school students, it may be a comfortable, safe place for teachers to begin expressive movement instruction. Since the shoulder was the second most common body part and is adjacent to the head, some students may have success with adding shoulder movements as well. Knee was third most common and second most expressive body part for the students. It should be noted that the lower limb movement in this study may be specific to this percussive piece and may not be generalizable to less rhythmic pieces. Depending on the music, then, teachers may note the authenticity of certain body movements as an issue to weigh in movement instruction.

In the current study it was uncommon for students to make specific movements that linked to musical parts of the piece. The movements tended to be consistent throughout the piece. This finding is contrary to the findings of previous research (Loehr & Palmer, 2009; MacRitchie, Buck, & Bailey, 2009; Palmer, Koopmans, Carter, Loehr, & Wanderley, 2009; Snyder & Krumhansl, 2001) that found participants to link movement to the structure of music. The reason for this contradictory finding may be due to high school students not being as attuned to theoretical/formal components of pieces, or it may be that expressive movement skills are still in their infancy with high school singers. It may, then, be a more difficult task to link expressive movements to musical components in order to portray formal issues found in the music. If a piece has a general mood across the whole piece, then students may have an easier time in their initial learning due to the consistency of the movements needed. While body sway was documented in Keller and Appel (2010) as an expressive movement that groups used for cohesion, the current study did not find that technique to be commonly used by the choral musicians. It may be that the presence of a conductor makes this movement less necessary or common. Studies that could use small ensembles of high school choral students who sing without a conductor may help future research address this issue.

It should be noted that some teachers may want students to look uniform and not detract from the music with movement. If, however, expressive movement is a desirable skill that teachers would like to teach, then envisioning a sequence of instructional steps for school settings may be helpful. Especially since Davidson (1993) stated that non-experienced listeners may benefit from movement to encourage preference, the visual-aid assistance may be useful for high school parent audience members who may not be musically trained concert goers. Starting with basic

synchronization tasks of listening to music and tapping along may be an appropriate first step for high school students who are learning to move expressively. Next, teachers could have students view (by video or in person) performance groups that utilize movement for expressive purposes and the class could engage in a discussion about which movements were used and which seemed most appropriate and communicative. Whether video or in person concert, screening groups for positive instances of authentic, expressive movement may be important (McClaren, 1988) so that movement choices are less confusing.

Depending on the group that the students watch, the common movements of head, shoulder, and knee that were found in the current study may or may not be as prevalent, so having the teacher guide the movement choices in terms of sequencing and difficulty to the group in their early stages of learning may be important. For instance, since knee movement tended to happen in one knee or the other in the current study, it may be important to consider dominant handedness for student comfort, ease, and authenticity when introducing this expressive movement to students. Once movements have been discussed, the class could then practice using their chosen movements in a piece they would practice. In order to facilitate the communicative potential of movement expression, the teacher may wish not to conduct. Also, while Leman, et al. (2009) found that performers tended to agree on movement intent, teachers may need to let students know that expressive choices can be individualistic, and so students shouldn't feel compelled to exactly mirror other students (Nusseck & Wanderley, 2009).

The small positive, non-significant correlation between achievement and expressive movement found in the current study may mean that these are two fairly distinct skills that teachers may want to address separately in their instruction time. The best singers in a group may not necessarily be expressive movement leaders; they may be anywhere on the expressive movement spectrum. When looking for student leader models, then, teachers may need to look beyond performance skill when searching for teaching assistant helpers. Therefore, a teacher may be able to highlight a student as a volunteer model of appropriate, synchronized, expressive movement who might not normally be able to serve as a model for beautiful tone or diction, but could be a leader in this arena.

Expressive movement is a part of performance communication that is authentic to what performers do in professional settings. If teachers believe that "the facts about performance movement suggest that it is necessary for musicians to be able to use the full potentiality of their movements in their preparation and performance to make their music optimally communicable" (Lehmann & Davidson, 2002, p. 554), then weighing instructional choices for school-aged musicians needs to be part of the discussion. The more research that can help teachers understand this complex behavior, the greater the possible benefit to student musicians as they progress through choral instructional ensembles and into the community or professional setting.

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